

**FIVE YEAR REVIEW REPORT
WAITE PARK WELLS
WAITE PARK, MINNESOTA**

I. PURPOSE

The Minnesota Pollution Control Agency (MPCA) conducted this Five-Year Review of the remedial actions (RA) implemented at the Waite Park Wells Superfund (Site), Waite Park (City), Minnesota. This review evaluated whether the RA at the Site remains protective of public health and the environment.

Section 121 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and Section 300.430(f)(4)(ii) of the National Oil and Hazardous Substances Pollution Contingency Plan require review of any RA which results in substances, pollutants or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure. The review should occur no less often than every five years after the initiation of such RA to ensure that human health and the environment are being protected.

OSWER Directive 9355.7-02 (Structure and Components of Five-Year Reviews, May 23, 1991) states that the U.S. Environmental Protection Agency (EPA) will conduct five-year reviews as a matter of policy at: (1) sites where no hazardous substances will remain above levels that allow unrestricted use and unrestricted exposure after completion of the RA, but the cleanup levels specified in the Record of Decision (ROD) will require five or more years to attain; and (2) sites addressed pre-SARA at which the remedy, upon attainment of the cleanup levels, will not allow unlimited use and unrestricted exposure. The five-year review of the RA at this Site was conducted in accordance with this policy.

The EPA established a three-tier approach to conducting five-year reviews, the most basic of which provides a minimum protectiveness evaluation (Level I review). EPA determines the level of the review based on site-specific considerations, including the nature of the response action, the status of ongoing site response activities, and proximity to populated areas and sensitive environmental areas. A Level I review was conducted for the Site, and consisted of: (1) a review of all documents associated with the RA and (2) site visits on June 30, 1999, and August 17, 1999.

The Site consists of three individual sites: the City water supply wells, the Electric Machinery site (EM site), and the Burlington Northern Car Shop site (BN site).

The RA for the City water supply wells was conducted in accordance with the January 5, 1989, ROD for the EM site. The RA consisted of installation of a packed tower aeration unit to remove the contaminants from the City water supply.

The RA for the EM site, conducted in accordance with the January 5, 1989, EM site ROD, consisted of treatment of the shallow and deep aquifers by installing pump-out wells, packed tower aeration treatment, and discharge of the treated water under a National Pollutant Disposal Elimination System (NPDES) permit to the Sauk River.

The RA for the BN site, conducted in accordance with the July 14, 1994, ROD, consisted of excavation and treatment by solidification/stabilization of impacted soils in Areas A, C, H and the Paint Shop Building, and construction of an on-site containment cell composed of a liner, leachate collection system and cover system. Ground water and gas monitoring were also included. An Explanation of Significant Differences (ESD) signed August 11, 1998, presented an Integrated Remedy to address additional impacted soils on the site which were discovered during development activities. Additional soils were treated on-site and then hauled off-site for disposal.

This Five-Year Review is conducted to determine if the implemented RAs for the City water supply wells, the EM site and the BN site are adequately addressing the ground water and soil contamination at the Site.

II. SUMMARY OF SITE CONDITIONS

A. Site Background

As indicated above, the Site consists of three individual sites: the City water supply wells, the EM site and the BN site (see Figures 1 and 2). The City water supply wells are located within the 200-acre BN site, which is in the city of Waite Park. The 45-acre EM site is adjacent to and just north of the BN site, in the city of St. Cloud.

From 1969 to 1977, the Electric Machinery Manufacturing Company owned and operated a gas turbine and electric generator manufacturing facility in St. Cloud. Waste solvents generated at the facility were discharged from a sump into soil and ground water at the EM site.

The Burlington Northern Railway Company (Burlington Northern) began operations in Waite Park in 1894. The operation included construction and repair of railroad freight, tank and hopper cars. From 1950 to 1970, approximately 10,000 gallons annually of waste oil, paint waste and solvents were disposed of at the yard by landfilling and/or evaporation.

In December 1984, volatile organic compounds (VOCs) were found in the City water supply wells. On January 28, 1985, the Minnesota Department of Health (MDH) informed MPCA staff that the City was being advised to discontinue use of its water supply as soon as possible due to unacceptable levels of hazardous substances in its drinking water. The MPCA then issued a Determination of Emergency, allowing access to State Superfund funding to provide City residents with a safe drinking water supply and to undertake an investigation and Feasibility Study (FS) to determine the most

appropriate long-term drinking water alternative. Nearby St. Cloud businesses initially provided safe drinking water, and on February 4, 1985, an emergency connection between the City and St. Cloud water systems was made until the most appropriate long-term water supply system, selected through the FS, could be constructed. On March 19, 1985, the Site was placed on EPA's National Priorities List with a Hazard Ranking System score of 32, making it eligible for investigation and cleanup under the federal Superfund program. The EM and BN sites were also listed separately on Minnesota's Permanent List of Priorities.

MPCA staff conducted a limited remedial investigation (RI) to determine the source of the ground-water contamination. On October 22, 1985, after completion of the initial RI, the MPCA issued a Request for Response Action (RFRAs) to Burlington Northern, citing the BN site as a source of contamination to the City water supply wells. On March 25, 1986, and September 26, 1986, the MPCA also issued RFRAs to Brown Boveri & Company Limited, Cooper Industries, Inc., Dresser Industries, Inc. and Electric Machinery Manufacturing, Responsible Parties (RPs) for the EM site. The RFRAs also cited the EM site as a source of contamination to the City water supply wells. The RFRAs requested both Burlington Northern and the RPs for the EM site to conduct a RI/FS and implement a Remedial Design/Response Action (RD/RA) Plan for a long-term water supply treatment system for the City. The RFRAs also requested Burlington Northern and the RPs for the EM site to conduct RI/FS investigations and implement RD/RA to address the contamination at their respective sites.

B. Results of Site Investigations

A layer of glacial till separates an upper sand and gravel unit from a lower sand and gravel unit across the entire Site. Both units are water-bearing aquifers. The glacial till forms the base of the upper aquifer and generally acts as an aquitard, which limits flow of ground water and contaminants into the underlying aquifer. In the southeast part of the EM site, the glacial till is absent and the upper and lower aquifers are in contact. This allows contaminants that were released to the upper aquifer at the EM site to migrate from the upper to the lower aquifer. Pumping of the municipal wells affects ground-water flow in both the lower and upper aquifers due to the connection between the two aquifers. On the southern side of the Site, ground water in the upper aquifer generally flows north, towards the EM site and the area where the glacial till is absent. Ground water in the lower aquifer flows northeast.

Analysis of the City water supply collected during the initial investigations identified VOC contamination. The types of VOCs detected along with the maximum concentrations detected, as presented in the ROD for the EM site, are provided in Table 1. As indicated in Table 1, the contaminants with the highest concentrations are tetrachloroethene (PCE) at 680 micrograms (ug)/liter (L), and 1,1-dichloroethane (DCA) at 270 ug/L.

Electric Machinery

Analysis of the ground-water samples collected during the RI for the EM site identified several VOCs in the shallow and deep aquifers on and off the EM site. As indicated in Table 1, the contaminant with the highest on-site concentrations (as presented in the ROD for the EM site) is PCE, although trichloroethene (TCE), 1,1,1-trichloroethane (TCA) and cis- and trans-1,2-dichloroethene (DCE) are also present at significant levels. PCE has been found on-site in the shallow aquifer at concentrations as high as 34,000 ug/L. The deep aquifer is less severely contaminated with PCE concentrations of approximately 600 ug/L found in both on- and off-site wells.

The soil investigation conducted during the RI for the EM site identified some very localized areas of soil contamination. However, no significantly contaminated soil requiring remediation was identified. An additional soil investigation was conducted during the fall of 1999, in order to determine whether excavation of contaminated soil was a feasible means to reduce costs and time of operation of the pump-out system. This investigation is discussed in detail under the Current Status section below.

Burlington Northern

The BN site consists of three operable units. Operable Unit 1 addresses the remediation of former lagoons in which liquid and solid wastes were disposed, resulting in soil contamination. Operable Unit 2 addresses the remediation of contaminated sandblast sands. Operable Unit 3 addresses the shallow ground-water contamination. For ease in study, the site was divided into eight sections, lettered A through H. The major contamination issues are presented below.

Operable Unit 1. Three lagoons containing approximately 17,500 cubic yards of lubricating oils and greases, oils containing polychlorinated biphenyls (PCBs), cooking oils, solvents and paints existed in Area A. Maximum concentrations of substances in the lagoons included 570 milligrams (mg)/kilogram (kg) PCBs, 42 mg/kg arsenic, 4.9 mg/kg cadmium and 120,000 mg/kg lead.

Operable Unit 2. Paint containing high concentrations of lead was stripped from railroad cars at a sandblasting station located in Area H. Waste sandblast sand was spread throughout the site and used as fill in holes and lagoons. In 1992, concerned for children who were playing on the site, Burlington Northern consolidated 7,000 cubic yards of sandblast sands in Area H, which they covered with plastic and fenced in. A fence was also placed around additional sandblast sands in Area A. Analysis of the sandblast sands showed maximum concentrations of 17,000 mg/kg lead, 18 mg/kg arsenic and 2.8 mg/kg cadmium.

Operable Unit 3. Shallow ground-water contamination was noted in several areas. Continued ground-water monitoring indicated a trend in decreasing contaminant concentration, in most cases to below health based limits.

In March 1989, Burlington Northern removed 13 underground and above ground storage tanks, and 11 tanks from the basement of a building. Contaminated soils encountered were excavated, stockpiled on concrete and covered with plastic.

C. Current Status

As part of the work under the ESD in 1999, approximately 81,000 cubic yards of lead contaminated soil from the BN site were excavated, stabilized and landfilled off-site. 60 acres of the BN site, including all or portions of Areas B, C, D, E, F, G and H, have not been completely investigated for lead impacted soil. Burlington Northern does not own all the property remaining to be investigated. The RI Plan for the additional investigation was approved in December 1999, and Burlington Northern expects to complete the investigative work during the spring of 2000.

An additional source investigation was conducted at the EM site. A contingency plan was in place to excavate any contaminated encountered during the investigation. The intent of the investigation and excavation was to assess and potentially reduce the volume of badly contaminated soils remaining at the EM site, thereby reducing the operation time of the pumpout system. The investigation identified a significant volume of contaminated soils, which were subsequently excavated and disposed of at an industrial landfill. A final report on the investigation and excavation has not yet been received, so the volume of excavated soil is unknown.

The City is in the process of contracting for a new municipal well just west of the two municipal wells currently at the Site, because the present wells no longer supply the volume of water needed by the City's residents. Despite repeated attempts to locate a new well field in an area remote from the contamination at the Site, this area appears to be the only source of ground water in sufficient volume for a municipal well. The additional volume of water will also require expansion of the treatment system. The current treatment system required replacement of packed tower media in the summer of 1999, when PCE was detected in excess of the Maximum Contaminant Limit (MCL) in treatment system effluent.

A Preliminary Close-Out Report for the Site was completed on September 9, 1999, documenting the completion of the RAs for the Site.

III. SUMMARY OF RESPONSE ACTIONS

A. City water supply wells

A water supply Focused FS for the City was completed by the MPCA, and in September 1986, MPCA staff approved a RA for the treatment of City water supply wells 1 and 3. Response actions for the City water supply wells were identified under the ROD for the EM Site; a separate ROD was not executed for the City water supply wells. The RA consisted of the installation of a packed tower aeration system that would remove the contaminants from the water supply. Burlington Northern and the RPs for the EM site

jointly funded and implemented the water treatment system and the City water supply wells were placed back into service in February 1988. The City took over operation and maintenance (O&M) of the system after it was constructed. VOCs continue to be present in influent to the packed tower aeration system; however, effluent was consistently below MCLs until the summer of 1999, when PCE was detected at levels greater than the MCL. The packed tower media was replaced and the system is now adequately treating the ground water for public consumption.

B. Electric Machinery

The EM site investigation was completed and a ROD issued on January 5, 1989. The remedy implemented at the EM site included the treatment of the shallow and deep aquifers by installing pump-out wells in the contaminated plumes, packed tower aeration treatment of contaminated ground water, and discharge of the treated water to the Sauk River under a NPDES permit. Implementation of the RA for the deep aquifer was not necessary because it was determined that the EM site contamination in the deep aquifer was within the capture zone of the City water supply wells, and the City water supply treatment system was capable of treating the contaminated water. The last Five-Year Review for the Site raised the question of whether the deep aquifer contamination was being adequately captured by the treatment system. A ground-water flow model was constructed by the RPs for the EM site, which indicated that the plume appears to be contained in the capture zone of the City water supply treatment system. Construction of an additional water supply well in the deep aquifer will enhance plume capture and should put to rest any questions concerning the capture zone.

C. Burlington Northern

The BN site ROD was issued on July 14, 1994. This included excavation and treatment by solidification/stabilization of impacted soils in Areas A, C, H and the Paint Shop Building, and construction of an on-site containment cell composed of a liner, leachate collection system and cover system. Ground water and gas monitoring were also included in the ROD.

41,900 cubic yards of soil contaminated primarily with PCBs and metals were treated and placed in the containment cell, which was closed in 1995. At the time of the ROD, the MPCA thought the majority of the disposal areas were identified, but confirmation testing and other information identified additional lead contaminated soils in Areas A, B, C and H. The lead contamination is thought to be a result of disposal of waste sandblast sands from the sandblasting operations.

In order to address the remaining contamination, the MPCA prepared an ESD, dated August 11, 1998. The ESD presented an Integrated Remedy to address known and potentially impacted soils. Because portions of the site were undergoing development, additional areas of contaminated soil were identified. A total of 157,500 cubic yards of lead-impacted soil was excavated from Areas A, B and C in 1999, and was treated using a

stabilizing agent. The soil was then disposed of at the Superior FCR Landfill located in Buffalo, Minnesota, where it was used as daily cover material with MPCA approval.

Known areas of impacted soil still exist in Areas B and C and will be addressed using the ESD approach. Deed restrictions will be necessary in some areas to ensure the remedy remains protective of human health and the environment. A site-wide ground-water monitoring plan was developed and implemented.

IV. REMEDIAL OBJECTIVES

The remedial objective for the City water supply RA is to protect public health by treating extracted ground water to acceptable drinking water standards prior to public consumption and to prevent further migration of contaminated ground water.

The remedial objective for the EM site is to protect public health and the environment by abating or minimizing the continued migration of VOCs from the EM site through the ground water. This includes preventing migration of contaminants to the City's municipal wells and restoring the contaminated aquifer.

The remedial objective for the BN site is to protect human health and the environment by reducing exposure to lead contaminated soil through excavation, stabilization and landfilling and to protect human health and the environment by reducing exposure to, and migration of contaminated ground water.

V. APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) REVIEW

Five-Year Review guidance establishes the policy for EPA to review and analyze the RA at a site as it is affected by newly promulgated or modified federal and state environmental laws. The RA must meet all identified applicable or relevant and appropriate federal and more stringent state requirements.

A. ARARs specified in the ROD for the EM site are listed as follows:

- 1. The Resource Conservation and Recovery Act (RCRA; 40 CFR Part 264).** Requires removal of all waste residues and soil contaminated with hazardous waste. The ROD indicates that VOCs entering the ground water from the soils will be removed by the shallow aquifer pump-out system. Although the pump-out system removes the contaminants once they reach the ground water, it is possible that contaminants remain in the soils that continue to impact the ground water.
- 2. Clean Water Act (40 CFR Parts 122 and 125).** Treated water discharged to the Sauk River is regulated through the requirements of a NPDES permit, which achieves the requirements of this ARAR.
- 3. Safe Drinking Water Act (40 CFR Parts 141-146).** Establishes federal MCL for contaminants in public drinking water supplies. Treated water from the City supply wells

is currently in compliance with the MCLs. However, all the ground water at the Site does not meet this ARAR. Therefore, the pump-out system must continue to contain the contaminated ground water to prevent the further spread of this contaminant.

4. Minn. Stat. §§ 115 and 116 and Minn. R. ch. 7001 and Minn. R. pt. 7050.021.

Regulates discharge of the treated water to the Sauk River under a NPDES permit.

5. Minn. R. pt. 7050.0220. Requires that discharges to ground water that will be used for consumption attain MCLs and MDH Recommended Allowable Limits for contaminants in drinking water. Since the treated water is not discharged to the ground water, this ARAR is not violated.

6. Minn. Stat. §116.07, subd.4.A. Regulates air emissions of toxic pollutants. At the time the ROD was prepared, the operation of the air strippers did not require a permit. Emissions from the air strippers were evaluated as a part of this report and were found to be well below Minnesota's Allowable Emission Rates.

7. Minn. Stat. § 105. Regulates ground-water extraction through a Water Appropriation Permit from the Minnesota Department of Natural Resources. The selected alternative meets the requirements of the permit.

B. ARARs listed in the ROD for the BN site are:

1. CERCLA as amended by SARA.

2. 40 CFR 258. Postclosure care and monitoring must continue for 30 years unless a decrease period can be approved by the MPCA.

3. Safe Drinking Water Act. National Primary Drinking Water Standards (40CFR part 141-143) MCLs and Maximum Contaminant Level Goals are health and treatment based numbers for regulating public water supplies.

4. Clean Water Act. Water Quality Criteria (40 CFR Part 131 Quality Criteria for Water 1976, 1980 and 1986). **Toxic Pollutant Effluent Standards (40 CFR Part 129)** Effluent standards are to be attained for PCBs if treated ground water is discharged to the Sauk River.

5. RCRA. Identification and Listing of Hazardous Waste (40 CFR Part 261). Subtitle C of RCRA establishes Land Disposal Restrictions (40 CFR Part 268) which restrict the land disposal of RCRA hazardous wastes. Ground Water Monitoring Response Requirements (40 CFR 264.94)

6. Clean Air Act. National Primary and Secondary Ambient Air Quality Standards (40 CFR Part 50)

7. Minn. Stat. §115B (1992). The Minnesota Environmental Response and Liability Act

8. Minn. Stat. §115.061(1992). The Minnesota Water Pollution Control Act provides for protection of the waters of the state by requiring the responsible person to "recover as rapidly and as thoroughly as possible such substance or material and take immediately such other action as may be reasonably possible to minimize or abate pollution of waters of the state caused thereby."

9. Minn. Stat. §115.03(1992). MPCA may require and enforce a permit for any discharge to the waters of the state.

10. **Minn. Stat. §144.98.** Applies to the MDH authority to certify environmental laboratories.
11. **Minn. Rules ch. 4717. Health Risk Limits**
12. **Minn. Rules ch. 7007 and 7009.** Air Emissions and Ambient Air Quality Standards apply during excavation, treatment and construction activities.
13. **Minn. Rules ch. 7001.** Odorous emissions, petroleum and volatile organic compound storage vessels apply during excavation, treatment and construction activities.
14. **Minn. Rules ch. 7030.** Noise emissions.
15. **Minn. Rule ch. 7035.** Solid Waste Management Rule pt. 7035.2815, applies to the construction and monitoring requirements of an on-site containment facility.
16. **Minn. Rule 7045.** Applies to listed and characteristically hazardous waste.
17. **Minn. Rule ch. 7050.** Standards for water.
18. **Minn. Rules ch. 7060(1991).** To protect the quality of water of the state.
19. **Minn. Rules ch. 4725.** Water Well Code.
20. **Minn. Rule 4740.** Applies to the certification procedures and standards for laboratories.
21. **Minn. Rule 5205.** Health and safety standards for worker health, safety and training.

Because response actions at the City water supply wells were completed under the ROD for the EM site, the EM site ARARs also apply to the City water supply wells.

VI. SUMMARY OF SITE VISIT

A site visit was conducted on June 30, 1999 by Miriam Horneff, Sandra Beck, Eric Porcher and Brenda Winkler of the MPCA; Jim Kelly of MDH; Bill Schluez of the City of Waite Park; and Greg Johnson and Terry Wotzka of SEH. Following is a summary of observations made during the site visit concerning the City water supply wells:

- Three wells are housed in three separate well houses at the site.
- The wells are pumped for 12 to 18 hours per day on average.
- The packed tower aeration system is rated at a maximum capacity of 900 gallons per minute. Water treatment equipment used to finish the water is housed in the same building as the packed tower.
- The packed tower exhibited severe iron and manganese fouling of the media. City staff indicated that the packed tower had not been cleaned since its construction in 1988.

A prefinal inspection of the ESD work at the BN site was conducted on August 17, 1999, by Brenda Winkler, Eric Porcher and Sandy Beck of the MPCA; Judy McDonough of Burlington Northern and Kurt Geiser of ThermoRetec, Inc. Following is a list of items to be completed, as observed during this site visit:

- Complete the sweeping of the concrete pad where contaminated sediment was stockpiled.
- Removal of berms around the stockpile area. The berms may stay in place for future excavation activities planned for areas B and C.
- Seeding two former stockpile areas – area H and the area just west of the containment cell. Both areas are on the City's property.
- Development of a Construction Completion Report, complete ground water monitoring well abandonment, develop soil sampling plan for the remainder of the BN site (60 acres), and develop a soil sampling plan in the vicinity of monitoring well MPCA 14S.

VII. RECOMMENDATIONS

1. The pumpout system at the EM site and the treatment system at the City well field should continue operation because ground water in the vicinity remains contaminated at levels of concern.
2. Regular monitoring of influent and effluent at the packed tower aeration system and the EM site pumpout wells should continue. VOC levels in municipal water should be monitored carefully to ensure that MCLs are not exceeded.
3. An O&M plan was not in place for the packed tower treatment system, which is why no maintenance was done until the tower malfunctioned. To prevent this in the future, an O&M plan should be developed and implemented. When the new treatment system is built, an O&M plan should be developed and implemented for that system as well.
4. Engineering plans for the new city well and treatment system should be carefully reviewed by the MPCA and MDH to assure that the new components of the water supply system will provide an adequate quantity of and acceptable quality of water for the City.
5. A pumping plan should be developed and implemented which minimizes the use of well #4, which has not yet become contaminated, to ensure that it remains clean.
6. Continue with the investigation and remediation of additional lead impacted soils at the BN site.
7. Continue monitoring of the BN on-site containment cell.
8. Continue operation and maintenance monitoring of the BN remedial actions.

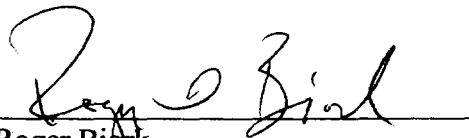
VIII. STATEMENT OF PROTECTIVENESS

The ground-water pumpout systems in both the upper and lower aquifers are operational and are adequately capturing and treating contaminated ground water. Shallow aquifer pumpout wells are operating within the limits of the NPDES Permit. The packed tower aeration system has treated the municipal water supply to drinking water standards for every sampling event except one. O&M of the packed tower aeration system has not been adequate and must be improved to ensure that the remedy remains protective. The

containment cell at the BN site has been operated and monitored in a manner which ensures that it is protective of human health and the environment. The investigation and remediation of additional lead contaminated soils at the BN site must be completed to assure that the soil remedy remains protective.

IX. NEXT REVIEW

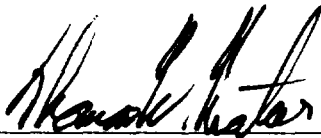
Hazardous substances, pollutants or contaminants are likely to remain the Waite Park Wells Site which will not allow for unlimited use or unrestricted exposure. EPA or the MPCA, if delegated to do so by EPA, will conduct another Five Year Review by January 31, 2005.



Roger Bjork
North District Manager
Minnesota Pollution Control Agency

2/7/00

Date

for 
William E. Muno, Director
Superfund Division
U.S. Environmental Protection Agency

14 Feb 00

Date

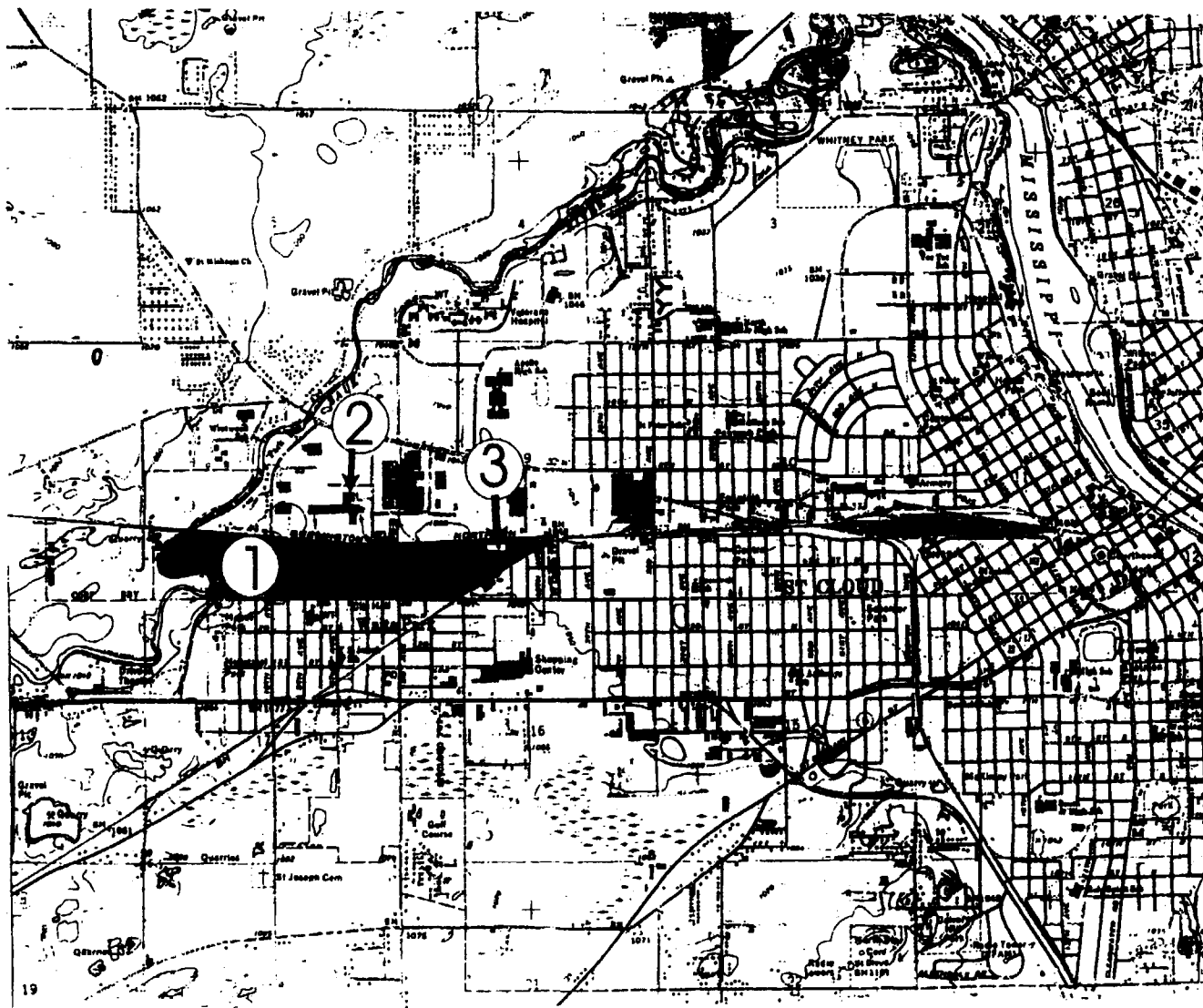


Figure 1. Waite Park Wells Site and Vicinity.

1. Burlington Northern Site 2. Electric Machinery Site. 3. Waite Park Municipal Wells.

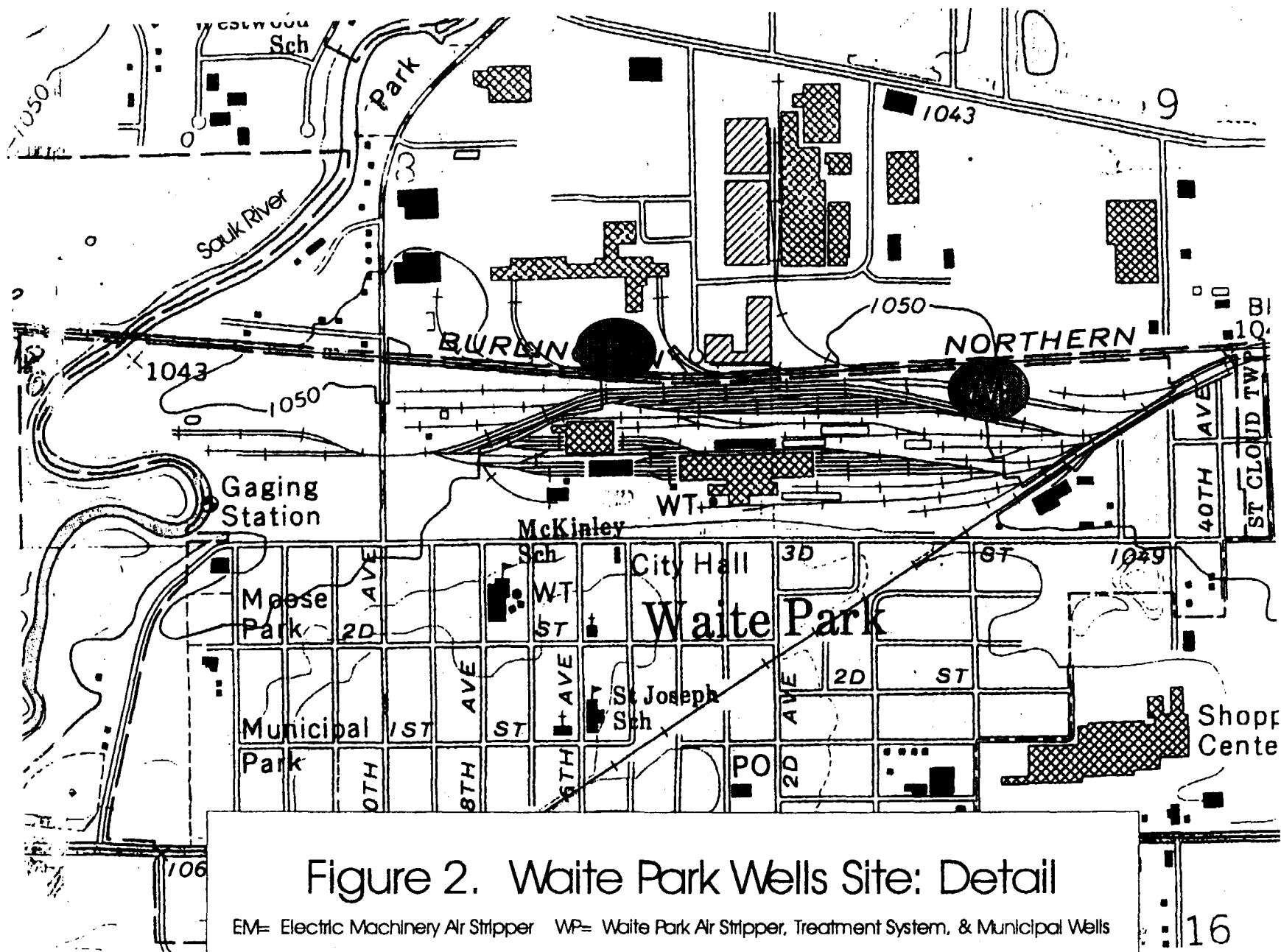


Figure 2. Waite Park Wells Site: Detail

EM= Electric Machinery Air Stripper WP= Waite Park Air Stripper, Treatment System, & Municipal Wells

Table 1
Ground Water Quality
Waite Park Ground Water Contamination Site

Compound	MCL	Waite Park Water Supply			Electric Machinery		
		Maximum Concentration Detected from 1/5/89 EM ROD	Maximum Concentration Detected Before Treatment 11/93 to 6/99	Maximum Concentration Detected after Treatment 11/93 to 6/99	Maximum Concentration Detected from 1/5/89 EM ROD	Maximum Concentration Detected Before Treatment 11/93 to 6/99	Maximum Concentration Detected after Treatment 11/93 to 6/99
units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
cis-1,2-Dichloroethene	70	11	9	0.4	4000	480	1
trans-1,2-Dichloroethene	100	a	74	6.4	a	15	6.4
1,1-Dichloroethane	NA	270	56	nd	380	nd	nd
1,2-Dichloroethane	5	7.2	nd	nd	nd	nd	nd
1,1-Dichloroethene	NA	94	1	nd	nd	7	2.5
Tetrachloroethene	5	680	140	0.7	34,000	900	nd
1,1,1-Trichloroethane	200	nd	54	17	1300	24	nd
Trichloroethene	5	60	52	1.1	5100	1800	7.2
Trichlorofluoromethane	NA	na	1.4	nd	na	nd	1
m + p xylene	10000	na	nd	nd	na	6.7	nd
TPH	NA	na	na	na	na	390	na
Vinyl Chloride	2	na	nd	nd	na	nd	nd

nd = nondetect

na = not analyzed

a = value for cis-1,2-Dichloroethene represents total of cis + trans